



IN THE U.S. PATENT AND TRADEMARK OFFICE

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Applicant(s): Gaston GLOCK

For: METHOD FOR ACTIVATING A WEAPON WITH AN
IDENTIFICATION MECHANISM

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APPELLANTS' BRIEF ON APPEAL UNDER 37 CFR §41.37

Sir:

This is an appeal from the decision of the
Examiner dated April 14, 2009 finally rejecting
Claims 7-15, 17, 18, 20, 22-26 and 29-33.

I. REAL PARTY IN INTEREST

The inventor, Mr. Gaston Glock, is the real party in interest for this appeal.

II. STATEMENT OF RELATED CASES

None.

III. JURISDICTIONAL STATEMENT

This appeal is filed under 35 USC Section 134 as an appeal of the "final" Office Action dated April 14, 2009. A Notice of Appeal was submitted on July 13, 2009 and was received by the USPTO on July 17, 2009. This Appeal Brief is submitted on September 17, 2009 along with a Certificate of Mailing under 37 CFR 1.8.

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V. TABLE OF AUTHORITIES

MPEP Section 2141.02(VI)15
MPEP Section 2131.01.32
MPEP 2111.01.32

VII. STATUS OF AMENDMENTS

All amendments have been entered. No amendments were requested after the Final Office Action dated April 14, 2009.

VIII. GROUND OF REJECTION TO BE REVIEWED

A) Claims 7-11, 13 and 14, 17, 18, 20, 22, 29, 30 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 9804880 issued to Riener (equivalent U.S. Patent No. 6 510 642 issued to Riener).

B) Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riener in view of WO 01/18332 issued to Funfgelder.

C) Claims 15, 25 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riener in view of the Applicant's admissions in the specification and applicable case law.

D) Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Riener in view of U.S. Patent No. 6 260 300 issued to Klebes.

VIII. STATEMENT OF FACTS

1. Claims 7-15, 17, 18, 20, 22-26 and 29-33 are currently pending. Final Office Action Page 1

2. Claims 7-11, 13 and 14, 17, 18, 20, 22, 29, 30 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 9804880 issued to Riener

(equivalent U.S. Patent No. 6 510 642 issued to Riener). Final Office Action Page 2

3. The rejection is based upon WO 9804880 (Riener) but U.S. Pat. No. 6 510 642 to Riener is used for the rejection. Final Office Action Page 2

4. The Riener patent application was filed as a PCT application published on Feb. 5, 1998 as the WO 98/04880 publication, which is of record.

5. The WO9804880 reference contains an English language abstract but the remainder of the reference is published in German (herein '880 PCT application).

6. The Riener '880 PCT application was nationalized in the US and published in English as US 2002/0032976 A1, which is of record (herein Riener '976 US application).

7. The Riener US application issued as US Patent No. 6,510,642 B2, which is of record (herein Riener '642 patent).

8. The disclosure of the Riener '976 US application appears to directly track the format of the Riener '880 PCT application which is in German.

9. The published Riener '976 US application appears to be an English equivalent, if not direct translation of the Riener '880 PCT application.

10. The Riener '642 patent was amended during prosecution such that the disclosure and claims as patented do not directly track the published Riener '976 US application.

11. Applicants previously discussed the differences between the respective disclosures of the Riener '976 US application and the Riener '642 patent. Page 16 of May 14, 2007 Response

12. As to similarities that indicate that amendments are contained in the Riener '642 patent, Claim 5 of the Riener '642 patent conforms to published Claim 10 of the '976 US application.

13. Claim 5 of the Riener '642 patent discloses that the transmission and/or receiving unit (19, 219) of the user (17, 217) is "designed for the continual or continually consecutive, intermittent signal transmission".

13. Col. 5, lines 31-35 of the '642 patent refer to Claim 5 disclose that an authorized user check is performed at "short" "checking intervals".

14. Paragraph 13 of the Riener '976 application contains the same discussion of this language wherein patent Claim 5 and published Claim 10 are the same.

15. The Riener '976 application also includes application Claims 12 and 41 which are discussed in application Paragraph 15.

16. Claims 12 and 41 disclose that "the transmission and/or receiving unit (20) in the region of the firearm (2, 4) is designed for the continual and/or continually consecutive, intermittent emission of identification codes (30, 36)".

17. References are considered in their entirety in accord with MPEP Section 2141.02(VI).

X. ARGUMENT

I) Claims 7-11, 13, 14, 17, 18, 20, 22, 29, 30 and 32 are rejected as being anticipated by WO 9804880 to Riener (equivalent to U.S. 6 510 642).

A. Summary of Invention/Prior Art

The invention generally relates to the method of controlling the activation/deactivation of a weapon while avoiding interfering transmissions which would overpower a signal from an identification unit of an authorized user and disable the weapon. This objective is accomplished by using the identification mechanism or unit to initially identify an authorized user, and then send an activation code to the weapon which activation code is received wherein the weapon is placed in the active state to permit firing. After the weapon is made active, the signal strength of a continuous signal transmitted by the identification mechanism is then monitored. A processor on the weapon maintains the weapon active "exclusively dependent" upon the signal strength.

As such, the weapon of the claimed invention first receives the activation code, and thereafter, the processor on the weapon exclusively monitors the strength of the signals being received without regard to the content of the signals, i.e. frequency,

coding, etc. and maintains the weapon active so long as the signal is above a minimum signal strength.

Hence, if a powerful interfering transmitter enters the weapon zone, the interfering signal generated thereby would only add to the total signal strength which would continue to stay above the minimum signal strength and the interfering transmitter would not interfere with continuing activation of the weapon.

In the Riener '642 patent, this system requires both 1) a coded activation signal indicating an authorized user and 2) a proper distance condition. These two conditions are required to not only activate a weapon, but also to maintain the weapon in an unlocked condition after activation. The current claims of this application differ from Riener and are not anticipated thereby.

B. Applicants claimed invention does not require the simultaneous existence of two valid conditions namely, proper authorization and proper distance measurement.

Claims 7, 20 and 29 explicitly preclude requiring the simultaneous receipt of a valid authorization code and a proper distance measurement. Instead, the weapon is maintained in an active state exclusively dependent upon the strength of a signal indicating distance.

Independent Claim 7: defines that a coded activation signal is transmitted and then the continuous signal is thereafter transmitted. Receipt of the coded activation signal causes the weapon to initially be placed in the active state from the inactive state, and then the strength of the continuous signal is monitored.

The claimed method maintains the weapon in this active state "exclusively dependent [emphasis added] upon the monitored strength of the continuous signal being at or above a minimum signal strength". The remainder of Claim 7 further clarifies the meaning of "exclusively dependent" by precluding such things as the frequency of the continuous signal or the presence or absence of the coded activation signal. If the strength of the monitored continuous signal

falls below a minimum strength, the weapon is deactivated.

Thus, signal strength is the sole determinant of the maintaining step. This is not true in Riener as discussed below which requires simultaneous existence of the first condition, namely the continued presence and checking of the identification code, and the second condition, namely, proper distance.

Independent Claim 20: defines transmitting a coded activation signal with the activation code followed by transmitting an uncoded signal. Upon receipt of the coded activation signal, the weapon is placed in the active state. However, the signal strength of the uncoded signal is monitored and the weapon is maintained in the active state "exclusively dependent" [emphasis added] upon the uncoded signal...being at or above a minimum strength" and regardless of the signal frequency or the presence of an interference signal. Claim 20 further defines that "continued detection of the signal strength at or above said minimum strength exclusively maintains said weapon in said active state and prevents return

of said weapon to said inactive state. Thus, since the weapon is maintained active exclusively dependent upon the signal strength, this precludes the requirement that a proper coded signal be present and monitored simultaneous with the signal strength like in Riener.

Independent Claim 29: This claim defines transmission of a transmitted signal comprising a coded activation signal and thereafter a continuous signal, wherein the weapon is placed in the activated state if the signal received by the weapon includes the coded activation signal.

The signal strength is monitored and the weapon is maintained in the activated state exclusively dependent upon the signal strength of the received signal being at or above a minimum signal strength and regardless of signal frequency or the presence of the coded activation signal. The maintaining step avoids deactivation by an interfering signal provided that the received signal is adequate.

C. Claims 7, 20 and 29 all use the phrase "exclusively dependent" when referring to the signal

strength. This phrase distinguishes over Riener when fully considered.

The term "exclusively dependent" is used in the specification in Paragraph 8 which describes the invention. Further, this terminology does not read on Riener since it precludes simultaneous checking of both (1) a proper activation code and (2) an adequate signal strength. These two conditions are required in Riener, as discussed below, to first activate the weapon and thereafter, maintain the weapon active.

As Exhibit 1 (and as made of record in the Response dated June 20, 2008), Applicants attach hereto dictionary definitions for "exclusive", i.e. not shared with any others, and "dependent", i.e. forced to rely on something else. Thus, Claims 7, 20 and 29 maintain the weapon in the firing state in dependence on only one exclusive factor, namely the strength of the signal.

This prevents overpowering transmitters from drowning out an activation code and causing unwanted deactivation of the weapon which is the very problem

present in Riener, and the very problem avoided by Applicant's claimed invention.

D. Riener '642 patent must be interpreted in combination with its published application, namely Published US Patent Application No. 2002/0032976 A1 (herein the Riener '976 application).

Both the Riener '642 patent and the Riener '976 application are of record and should be considered in their entirety in accord with MPEP Section 2141.02(VI). Applicants have presented substantial analysis in the record as to the proper interpretation of Riener.

The Riener system requires continuous transmission of identification codes 30 which are continuously checked upon each transmission to confirm the presence of an authorized user. Col. 5 lines 31-35 and Col. 10, lines 19-56. This is a first condition of having the weapon activated and this first condition must continue to exist for the weapon to remain activated.

Simultaneously, with the continual, authorized user checks, distance monitoring also occurs in

Riener, which is a second condition necessary for the weapon remaining in the activated state. Col. 11, lines 4-58.

To fully appreciate that two separate conditions must continue to be satisfied even after initial activation of the weapon, the '976 application should be considered along with the similar, but different text of the '642 patent.

The '976 application is believed closest to the original PCT disclosure and contains some differences as to the Riener '642 patent.

First, patented Claim 5 conforms to published Claim 10 of the '976 Application, and discloses "continual or continually consecutive, intermittent signal emission" relative to the identification codes 30. Col. 5, lines 31-35 of the Riener '642 patent and Paragraph 13 of the '976 application contain the same discussion of this claim language, and disclose that an authorized user check is performed at "short" "checking intervals". The combination of these claims and the specification thereby teaches that the identification codes are emitted substantially

continuously and the authorized user check of such signals is done at short intervals.

Significantly, the Riener '976 application also includes application Claims 12 and 41 which are discussed in application Paragraph 15. However, these claims are deleted from the '642 patent and application Paragraph 15 was amended to delete any reference to a claim. Col. 5, lines 41-43 of the '642 patent. These originally-published claims refer specifically to the identification codes 30, 36 and confirm that the emission of the identification codes is continual and/or "continually consecutive, intermittent".

These disclosures establish that the identification codes are continually transmitted, and that the authorized user check is at short intervals. These transmissions therefore would occur even after the weapon is activated, such that proper checking of the identification code must be continually satisfied for the weapon to remain active.

E. The Riener system (as disclosed in the '642 patent and '976 application) does not anticipate the claims.

As discussed below, the first and second conditions must be present simultaneously and continuously in Riener.

First Condition Requires Continuous Receipt of Acceptable Identification Code:

In more detail, the first condition required in Riener is continuous receipt and continual checking of a proper identification code 30, 36. Claim 5 of the Riener '642 patent expressly discloses that the transmission and/or receiving unit (19, 219) of the user (17, 217) is "designed for the continual or continually consecutive, intermittent signal transmission". This thereby does teach that the codes 30 are sent continuously or essentially continuously.

Additional support is provided from the published US '976 application. It is noted that publication Claims 12 and 41 disclose that "the transmission and/or receiving unit (20) in the region of the

firearm (2, 4) is designed for the continual and/or continually consecutive, intermittent emission of identification codes (30, 36) [emphasis added]".

Notably the language of application claims 10, 12 and 41 substantially track each other, and hence are believed to expressly disclose that the identification codes 30 are transmitted continuously or at least substantially continuously through a "continuously, consecutive intermittent signal".

The skilled artisan would have knowledge of both the Riener '642 patent and the corresponding published '976 application so as to use both documents to interpret the scope of disclosure of the Riener prior art. When properly interpreted, Riener discloses that the coded signals 30 are in fact sent continuously even after the weapon is activated.

There has been argument in the record as to whether the '976 application should be considered in addition to the '642 patent. (Examiner's Statements in Paragraph 29, of July 2, 2008 Office Action, and Applicant's Response on Pages 23-25 of the Response dated December 31, 2008.) In the event this argument

is unresolved, applicant reiterates that the teachings of the Riener '642 patent must first be properly interpreted as to their meaning to the skilled artisan, and when properly interpreted, Riener fails to disclose all features of Applicant's claimed invention.

MPEP Section 2131.01 states that multiple references may be used as part of a 102 rejection. Extra references may be used to explain the meaning of a term in the primary reference. This recognizes that the skilled artisan would not read a reference in complete isolation, but would interpret a reference in view of known prior art. It seems Applicant can also rely upon a published application of the very patent being applied, since the published application would specifically disclose the very invention found in the primary reference.

Further, the actual 102 rejection is based upon the published '880 PCT application, with the '652 patent being asserted as an equivalent. Since the published PCT application contains 53 claims like the '976 application published in the US, it seems that

the closest equivalent reference is actually the '976 application.

The First Condition also Requires Continuous
Recognition of the Identification Codes After
Activation:

Since the coded signals 30 are continuously sent, they are tested each time for proper recognition or authentication. If not authentic or proper, the test would fail and the gun would not operate.

As to such signals 30, all of Col. 10 through Col. 11, lines 1-3 of the '642 patent describe how these identification code signals are transmitted, possibly encrypted and decrypted, and then compared (after being decrypted) to determine if the identification code 30 matches a code 36 in the memory unit.

As noted previously, the Riener '642 patent discloses multiple repeated transmissions. In this regard, Col. 10, lines 34-37 disclose that the "encoding code" and "decoding code" vary from "one transmission to the next". It is believed clear that the encoding and decoding codes are in fact

encryption and decryption algorithms and the reference to a signal being "encoded or even uncoded" in Col. 10, lines 57-62 is really a description of the unique activation code 30 being always present but optionally being encrypted or not. After decryption, the code 30 reappears. Col. 10, line 31-34. Even if not encrypted, the code 30 is present.

Col. 10 further discloses that when the code 30 is received, it is compared for a match with stored codes 36. This comparison is done each time a code is received. Since transmission of the code 30 is sent by a continual or continually consecutive, intermittent signal transmission pursuant to patent Claim 5 and application Claims 10 and 12, the code 30 would be checked substantially continually and would need to continually match the code 36 for the release element 15 to be made active and then remain active.

As discussed above as to patent Claim 5, Col. 5, lines 32-35 of the Riener '642 patent discusses Claim 5 and further states that this continual transmission provides advantages where it "performs an authorized

user check without any loss of security, if the checking intervals are kept correspondingly short."

Hence, the identification codes would continue to be sent even after weapon activation, and the authorized user check performed at short intervals.

Second Condition/Adequate Distance:

While Col. 11, lines 4-58 of the Riener '642 patent discuss distance, this does not eliminate the fact that the code 30 continues to be transmitted even when distance is monitored. The distance checking does not occur in a isolation, but occurs while the authorized user checking occurs.

In further support, Col. 11, lines 18-23 of the '642 patent disclose that distance protection can be provided by limiting the transmission range. This indicates that continuous transmissions of the code 30 would be required for this option to work. Since this passage is talking about the transmissions that contain the identification code 30, this necessarily indicates that the identification code 30 continues to be sent and the authorized user check performed, i.e. the first condition, while the signal strength

might be used simultaneously to monitor distance, i.e. the second condition.

Additionally, there may be secondary distance measuring devices 37 as cited in the rejection. Final Office Action Paragraph 3. But this does not negate the fact that transmission and checking of the code 30 still occurs. Riener discloses that the authorized user check is performed at short intervals during the continual or continually consecutive, intermittent signal transmissions, such that the distance measurement is a secondary condition that is simultaneously tested while the code 30 is still being transmitted and checked as the first condition.

Since the First and Second Conditions Must Coexist, The Riener Weapon is Not Maintained Active "Exclusively Dependent" Upon Distance:

Clearly then, transmission and checking of the codes 30 must coexist with the distance test. Hence, Riener does not maintain the weapon in a firing state "exclusively dependent" upon the distance test, since it also requires simultaneous performance of the identification code test.

In further support, patent Claim 7 and application Claim 13 recite that the range of transmission of the identification codes is greater than the distance or the distance range. Application paragraph 16 discusses application Claim 13 and states that "an authorized user can be identified without however deactivating the locking device e.g. for removal of the firearm and/or for firing a shot, and only when the authorized user is located with the distance range e.g. to the firearm can the locking device be deactivated". This clearly indicates that the identification code and distance measuring are two different processes that occur and may occur at different distance parameters. In particular, the code comparison and code authentication would occur even when beyond the distance range.

At no point is Riener believed to disclose that the continuous tracking of the identification code 30 would be terminated or disregarded, and the system would rely solely or depend exclusively upon the distance measuring to maintain the firearm active.

As discussed above, however, Applicant's Claim 7 defines the method which maintains the weapon in the active state "exclusively dependent [emphasis added] upon the monitored strength of the continuous signal being at or above a minimum signal strength". The remainder of Claim 7 further clarifies the meaning of "exclusively dependent" by precluding such things as the frequency of the continuous signal or the presence or absence of the coded activation signal. Thus, signal strength is the sole determinant of the maintaining step. This is not true in Riener which requires simultaneous existence of the first condition, namely the continued presence of the identification code, and the second condition, namely, proper distance.

Claim 20 defines that the signal strength of the uncoded signal is monitored and the weapon is maintained in the active state "exclusively dependent" [emphasis added] upon the uncoded signal...being at or above a minimum strength" and regardless of the signal frequency or the presence of an interference signal. Claim 20 further defines

that "continued detection of the signal strength at or above said minimum strength exclusively maintains said weapon in said active state and prevents return of said weapon to said inactive state. In Riener, continued detection of a signal strength would not exclusively maintain the weapon active since the failure of any authorized user check must also be avoided.

In Claim 29, the signal strength is monitored and the weapon is maintained in the activated state exclusively dependent upon the signal strength of the received signal being at or above a minimum signal strength and regardless of signal frequency or the presence of the coded activation signal. The maintaining step avoids deactivation by an interfering signal provided that the received signal is adequate. However, Riener's reliance upon the identification codes in addition to distance allows an interfering transmitter to overpower the identification code transmission and disable the firearm.

In view of the above, the claimed invention as defined by independent Claims 7, 20 and 29 is not disclosed in Riener, and Riener does not anticipate Applicant's claimed invention.

F. Office Action Paragraph 3 Incorrectly States that a Signal is Transmitted That Includes An Activation Code or May Be Uncoded

As a point of clarification, the identification code 30 referenced in Column 10, lines 1-4 is always coded to indicate that an authorized user has the weapon. The encoding/decoding of Col. 10, lines 57-62 merely refers to "encoded" or "uncoded" wherein the term "encoded" has a different meaning than code 30. More accurately, this disclosure discusses whether the identification code 30 itself is further encrypted so as to be an encrypted coded signal, or decrypted so as to be a decrypted yet still coded signal. In no case is the identification code 30 deleted from the signal transmission so that the signal is uncoded since this would eliminate the unique signature which makes 30 an identification code.

Therefore, the code of the identification code 30 and the encoded/decoded, i.e. encryption/decryption are two distinctly different things.

G. Riener Does Not Disclose Controlling Use of a Firearm Exclusively by Distance Measurement

For the first time, Paragraph 17 of the Final Office Action presents an argument that, since the identification code signals may be "intermittent", "during the period between coded signal transmissions, the only feature maintaining security is the distance measuring features described by Reiner." However, this argument still must ignore the fact that the system of Riener does not control use of a firearm exclusively dependent upon a signal strength, and is still controlling use of the Riener firearm in dependence upon the authorized user check and distance.

It is noted that the Examiner's argument relies upon a possible condition that might exist for an extremely brief moment in time, and as such, this still does not amount to controlling use of a firearm as such is claimed. As to Riener, the disclosure

uses the specific phrase "continual or continually consecutive, intermittent signal emission", which indicates that the intermittent signal emission is practically continual.

Further, the checking intervals are described as short intervals which must be short enough to avoid "any loss of security". In considering how the skilled artisan would interpret this language, the skilled artisan is designing a weapon security system able to defend against a manual disarming technique, and therefore would consider the amount of time required to perform such a technique when selecting the checking interval. While disarming might take a period of time if performed imperfectly and a struggle ensues, a well-performed disarm technique can be performed extremely quickly, as commonly seen in movies and training videos. The undersigned is an instructor of such techniques to martial artists and submits that a weapon disarm can be performed in a second or a fraction thereof, and such would be common knowledge to the skilled artisan. Hence, the authorized user check must take this into account,

and it is submitted that the skilled artisan would consider the short checking interval disclosed in Riener to be substantially less than a second so as to permit multiple checks each second. If the interval is of excessive length, a disarm technique could be performed and the weapon put into use by an unauthorized user extremely quickly. Hence, the reference to intermittent, is still believed to only allow fractions of a second between a user check.

It is further noted that col. 11, line 38 allows for the distance to be checked "periodically" such that it is possible that the distance still is not actively checked between authorized user checks. Further, this periodic check would also be performed very quickly to avoid the above problem of a quick disarming technique. Hence, a condition that might exist for a minute period of time still does not amount to controlling the use of the weapon.

Claims 7, 20 and 29 all define a method for "controlling the use of a weapon", which is that extended period between activation and deactivation. This period might be short but surely longer than a

fractional second. A use period would typically be that open ended period between when the firearm is deployed and activated, and then deactivated at any point time it is determined that use of the forearm is no longer necessary.

Pursuant to MPEP 2111.01, the claims are to be interpreted in light of the specification. Applicant's specification relates to a method for controlling use of a weapon for an extended period and not some fractional second or extremely brief period. This interpretation does not read a limitation into the claims, but merely reflects the nature of the disclosure and claimed invention and how the skilled artisan would reasonably interpret controlling the use of a weapon.

Hence, Riener still does not disclose the claimed invention. Applicant's claimed invention maintains the weapon in the active state up to the point the monitored signal falls below the minimum strength. This active state is maintained exclusively dependent upon the signal strength. As to Riener, Riener still

relies upon both the user check and distance check to control use of a firearm.

H. Funfgelder Simultaneously Requires A Positive Code Comparison and Maintaining Adequate

As to Funfgelder, this reference fails to cure the deficiencies of Riener discussed above. This reference previously was cited under Section 102 as an anticipatory reference for the pending claims although the rejection is now overcome.

This reference is like Riener in that it requires continuous receipt of an authorization code and maintaining of a satisfactory distance. Since, Funfgelder is distinguished, so should Riener.

In this regard, Claim 1 of Funfgelder requires that "the object is activated or remains activated [emphasis added] for each positive code comparison and [emphasis added] if a predetermined distance is maintained". The disclosure also discloses that "locking of the weapon is cancelled only so long as the signal", namely the coded signal is received. Hence, this system also requires two simultaneous conditions, namely 1) continuous receipt of a coded

signal and 2) proper distance. Funfgelder therefore can be overpowered by an interfering transmitter.

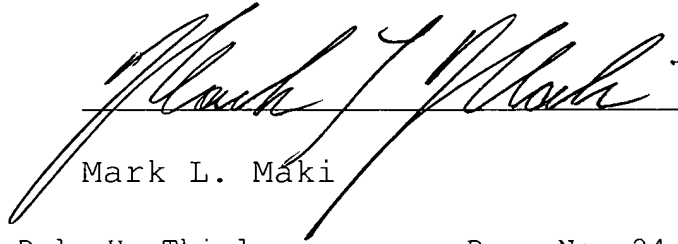
Funfgelder therefore differs from Applicant's claimed invention which does not require a continuous coded signal and instead, maintains the weapon active exclusively dependent upon the signal strength. As such, Funfgelder does not anticipate Applicant's claimed invention, and similarly, Riener also should not anticipate the claimed invention.

I. The Remaining Obviousness Rejections Fail Due to the Deficiencies of Riener and Funfgelder.

As to the obviousness rejections of the remaining claims, all rejections require Riener as disclosing the basic invention. In that Riener is defective and does not disclose the features of the independent claims, Riener is not believed effective as the primary reference for the obviousness rejections, and withdrawal of such rejections is requested.

Based on the foregoing, allowance of this application is requested.

Respectfully submitted,



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XI. APPENDIX

A. CLAIMS SECTION

1-6. (Cancelled)

7. (Rejected) A method of controlling the use of a weapon having a receiver and a processor secured thereto, the weapon being actuatable between an inactive state which prevents firing and an active state which permits firing, said method including the steps of:

providing a weapon having a receiver and a processor secured thereto, the weapon being actuatable between an inactive state which prevents firing and an active state which permits firing;

identifying an authorized user by an identification unit that is separate from the weapon;

transmitting from said identification unit a coded activation signal, which indicates identification of an authorized user for the weapon, to change said weapon from said inactive state to said active state and a continuous signal after the

coded activation signal is transmitted in order to thereafter maintain said weapon in said active state;

receiving with the receiver the coded activation signal and then the continuous signal transmitted by the identification unit;

with the processor, placing the weapon in the active state from the inactive state when the receiver receives the coded activation signal;

after said step of placing the weapon in the active state, monitoring the signal strength of the continuous signal received by the receiver;

by said monitoring, maintaining the weapon in the active state exclusively dependent upon the monitored strength of the continuous signal being at or above a minimum signal strength, and regardless of a frequency of the continuous signal or either the presence or absence of the coded activation signal, so as to avoid a deactivation of the weapon solely by monitoring the strength of the continuous signal, and

deactivating the weapon with the processor if the strength of the monitored continuous signal falls below the minimum strength.

8. (Rejected) The method of controlling the use of a weapon of Claim 7, wherein:

prior to said steps of transmitting the coded activation signal and the continuous signal from the identification unit, entering into the identification unit an identification code;

with the identification unit, comparing the entered identification code to an identification code in the identification unit; and

only if the entered identification code is the same as the identification code in the identification unit, performing said steps of transmitting the coded activation signal and the continuous signal from the identification unit.

9. (Rejected) The method of controlling the use of a weapon of Claim 8, wherein, in said step of entering the identification code into the identification unit, the identification unit reads biometric data from an individual.

10. (Rejected) The method of controlling the use of a weapon of Claim 8, wherein, said step of entering the identification code into the identification unit is performed by reading fingerprint data for an individual into the identification unit through a fingerprint reader attached to the identification unit.

11. (Rejected) The method of controlling the use of a weapon of Claim 8, wherein, said step of entering the identification code into the identification unit is performed by reading fingerprint data for an individual into the identification unit through a CCD fingerprint reader attached to the identification unit.

12. (Rejected) The method of controlling the use of a weapon of Claim 8, wherein:

a wristband is attached to the identification unit for holding the identification unit to an individual and the identification unit includes a switch for indicating if the wristband is closed; and

the identification unit includes an identification unit processor for performing said step of comparing the entered identification code to the identification code in the identification unit and the switch is connected to the identification unit processor for actuating the identification unit processor only when the wristband is closed.

13. (Rejected) The method of controlling the use of a weapon of Claim 8, wherein the continuous signal comprises a radio signal transmitted by the identification unit and received by the receiver; and said step of monitoring the strength of the continuous signal is performed by monitoring the strength of the radio signal.

14. (Rejected) The method of controlling the use of a weapon of Claim 7, wherein the continuous signal comprises a radio signal transmitted by the identification unit and received by the receiver; and

said step of monitoring the strength of the continuous signal is performed by monitoring the strength of the radio signal.

15. (Rejected) The method of controlling the use of a weapon of Claim 7, wherein the coded activation signal and the continuous signal are selected from a group consisting of infrared signals and ultrasound signals.

16. (Cancelled)

17. (Rejected) The method of controlling the use of a weapon of Claim 7, wherein the continuous signal comprises an uncoded signal.

18. (Rejected) The method of controlling the use of a weapon of Claim 7, including, after the weapon is in the active state, transmitting a readiness signal from the weapon to the identification unit and displaying the state of readiness of the weapon on the identification unit.

19. (Cancelled)

20. (Rejected) A method for controlling the use of a weapon which is actuatable between an initial inactive state which prevents firing and an active state which permits firing, comprising the steps of:

providing a weapon which is actuatable between an initial inactive state which prevents firing and an active state which permits firing;

providing an identification mechanism that is separate from the weapon and carried by a user authorized to use said weapon, the identification mechanism including a transmitter having a transmitting antenna;

providing a module on the weapon comprising a receiver having a receiving antenna and a processor;

detecting an authorized user with the identification mechanism to authorize operation of the weapon;

transmitting from the identification mechanism using the transmitter and the transmitting antenna, upon detecting an authorized user, a coded activation signal followed by an uncoded signal wherein the coded activation signal signals the detection of an authorized user to effect a change in state of said weapon from said inactive state to said active state;

using the receiver having the receiving antenna to detect the coded activation signal and the uncoded signal;

placing the weapon in the active state by said processor upon receipt the coded activation signal to permit firing of the weapon;

monitoring a signal strength of the uncoded signal received by the receiver;

responsive to said monitoring, maintaining the weapon in the active state exclusively dependent upon the uncoded signal received by the receiver being at or above a minimum strength and regardless of a frequency of the uncoded signal and of whether an interference signal is received, wherein continued detection of the signal strength at or

above said minimum strength exclusively maintains said weapon in said active state and prevents return of said weapon to said inactive state; and

deactivating the weapon by the processor by returning the weapon to said inactive state to prevent firing of the weapon once the signal strength of the uncoded signal received by the receiver falls to a level less than the minimum strength during said monitoring.

21. (Cancelled)

22. (Rejected) The method of controlling the use of a weapon of Claim 20, wherein the uncoded signal comprises an uncoded continuous RF signal and the activation signal comprises an RF signal.

23. (Rejected) The method of controlling the use of a weapon Claim 20, the module including a wake-up circuit for the steps of:

activating the processor when the receiver receives the activation signal, and

deactivating the processor when the received signal has a signal strength less than the minimum signal strength.

24. (Rejected) The method of controlling the use of a weapon of Claim 20, wherein the identification unit is integrated into a wristband, and the identification unit includes a switch for indicating if the wristband is closed, the identification unit detecting an authorized user and transmitting the activation signal followed by the uncoded signal to place and maintain the weapon in the active state only when the wristband is closed.

25. (Rejected) The method of controlling the use of a weapon of Claim 20, wherein both the activation signal and the uncoded signal consist of one of infrared energy and ultrasound energy.

26. (Rejected) The method of controlling the use of a weapon of Claim 20, including the step of displaying the name or the picture of the authorized user on the identification mechanism.

27-28. (Cancelled)

29. (Rejected) A method of controlling the use of a weapon having a module with a receiver and a processor attached thereto, the method comprising:

providing a weapon having a module with a receiver and a processor attached thereto;

transmitting from an identification unit that is separate from the weapon and carried by a user authorized to use said weapon, a transmitted signal that comprises a coded activation signal and a continuous signal after the coded activation signal;

receiving at the receiver a received signal which comprises the transmitted signal from the identification unit;

monitoring the received signal received by the receiver in the module and, with the processor of the

module, placing the weapon in an activated state to permit firing of the weapon if the received signal includes the coded activation signal;

after placing the weapon in the activated state, monitoring a signal strength of the received signal in the module;

by said monitoring, maintaining the weapon in the activated state exclusively dependent upon the signal strength of the received signal monitored in the module being at or above a minimum signal strength, and regardless of a frequency of the received signal or the presence or absence of the coded activation signal in the received signal;

wherein said maintaining step avoids a deactivation of the weapon from the activated state by a potential interfering signal from an interfering transmitter provided that the signal strength of the received signal is at or above the minimum signal strength during said maintaining step; and

deactivating the weapon with the processor if the signal strength of the received signal falls below the minimum signal strength during said monitoring.

30. (Rejected) The method of controlling the use of a weapon of Claim 29, wherein avoiding deactivation of the weapon from the activated state occurs when said signal strength is at or above the minimum signal strength such that the signal strength of the received signal may include a field strength of the potential interfering signal from the interfering transmitter without disturbing a readiness of the weapon to fire in the activated state.

31. (Rejected) The method of controlling the use of a weapon of Claim 29, further comprising:
displaying at the identification unit the name or the picture of an authorized user of the weapon.

32. (Rejected) The method of controlling the use of a weapon of Claim 29, wherein the continuous signal comprises an uncoded continuous RF signal and the coded activation signal comprises an RF signal.

33. (Rejected) The method of controlling the use of a weapon of Claim 29, wherein both the coded activation signal and the continuous signal consist of one of infrared energy and ultrasound energy.

B. CLAIM SUPPORT AND DRAWING ANALYSIS

7. (Rejected) A method of controlling the use of a weapon **{1, Figure 1}** having a receiver **{25; figure 1}{0029}** and a processor **{18; Figure 1} {0029}** secured thereto, the weapon being actuatable between an inactive state which prevents firing **{0031}** and an active state which permits firing **{0029}**, said method including the steps of:

providing a weapon **{1; Figure 1}** having a receiver **{25; Figure 1}** and a processor **{18; Figure 1}** secured thereto **{0029, Figure 1}**, the weapon being actuatable between an inactive state which prevents firing **{0031}** and an active state which permits firing **{0029}**;

identifying an authorized user by an identification unit **{2; Figures 1-3}** that is separate from the weapon **{0026; 0028}**;

transmitting from said identification unit a coded activation signal **{16; Figure 1} {0028; 0029; 0016}**, which indicates identification of an authorized user **{0028; 0016}** for the weapon, to change said weapon from said inactive state to said

active state {0016; 0029} and a continuous signal {19; **Figure 1**} {0007; 0018; 0031} after the coded activation signal {16} is transmitted in order to thereafter maintain said weapon in said active state {0007; 0018};

receiving with the receiver the coded activation signal {16} {0016; 0029} and then the continuous signal {19} transmitted by the identification unit {0018; 0030; 0031};

with the processor {18; **Figure 1**}, placing the weapon in the active state from the inactive state when the receiver receives the coded activation signal {0016; 0029};

after said step of placing the weapon in the active state, monitoring the signal strength of the continuous signal received by the receiver {0030; 0031};

by said monitoring, maintaining the weapon in the active state exclusively dependent {0008; 0007} upon the monitored strength of the continuous signal {19} being at or above a minimum signal strength {0007; 0008; 0031}, and regardless of a frequency of the

continuous signal **{0008; 0007}** or either the presence or absence of the coded activation signal **{0008}**, so as to avoid a deactivation of the weapon solely by monitoring the strength of the continuous signal **{0008; 0009; 0030}**, and

deactivating the weapon with the processor if the strength of the monitored continuous signal falls below the minimum strength **{0031; 0014; 0019; 0030; 0032}**.

8. (Rejected) The method of controlling the use of a weapon of Claim 7, wherein:

prior to said steps of transmitting the coded activation signal and the continuous signal from the identification unit, entering into the identification unit an identification code **{0016; 0026; 0028}**;

with the identification unit, comparing the entered identification code to an identification code in the identification unit **{0016; 0028}**; and

only if the entered identification code is the same as the identification code in the identification unit, performing said steps of transmitting the coded

activation signal and the continuous signal from the identification unit {0016; 0028}.

12. (Rejected) The method of controlling the use of a weapon of Claim 8, wherein:

a wristband {4; **Figures 1-3**} is attached to the identification unit for holding the identification unit to an individual and the identification unit includes a switch {14; **Figure 3**} for indicating if the wristband is closed {0012; 0015; 0027}; and

the identification unit includes an identification unit processor {9} {**Figure 3**} for performing said step of comparing the entered identification code to the identification code in the identification unit {0012} and the switch {14} is connected to the identification unit processor {9; **Figure 3**} for actuating the identification unit processor only when the wristband is closed {0012}.

17. (Rejected) The method of controlling the use of a weapon of Claim 7, wherein the continuous signal comprises an uncoded signal {0018}.

19. (Cancelled)

20. (Rejected) A method for controlling the use of a weapon {1; **Figure 1**} which is actuatable between an initial inactive state which prevents firing {0031} and an active state which permits firing {0029}, comprising the steps of:

providing a weapon {1; **Figure 1**} which is actuatable between an initial inactive state which prevents firing {0031} and an active state which permits firing {0029};

providing an identification mechanism {2; **Figures 1-3**} that is separate from the weapon {0026; 0028} and carried by a user authorized to use said weapon, the identification mechanism including a transmitter {24; **Figure 3**} having a transmitting antenna {0031};

providing a module {20; **Figure 1**} {0029} on the weapon {1} comprising a receiver {25; **Figure 1**} having a receiving antenna {17; **Figure 1**} and a processor {18; **Figure 1**} {0029};

detecting an authorized user with the identification mechanism {2} to authorize operation of the weapon {0028};

transmitting from the identification mechanism using the transmitter and the transmitting antenna, upon detecting an authorized user, a coded activation signal {16; Figure 1} {0028; 0029; 0016} followed by an uncoded signal {19; Figure 1} {0007; 0008; 0018; 0031} wherein the coded activation signal signals the detection of an authorized user {0028; 0016} to effect a change in state of said weapon from said inactive state to said active state {0029; 0016};

using the receiver {25} having the receiving antenna {17} to detect the coded activation signal {16; Figure 1} {0029} and the uncoded signal {19; Figure 1} {0031; 0007; 0008; 0018};

placing the weapon in the active state by said processor upon receipt the coded activation signal to permit firing of the weapon {0016; 0029};

monitoring a signal strength of the uncoded signal received by the receiver {0030; 0031};

responsive to said monitoring, maintaining the weapon in the active state exclusively dependent {0008; 0007} upon the uncoded signal received by the receiver being at or above a minimum strength {0007; 0008; 0031} and regardless of a frequency of the uncoded signal {0008; 0007} and of whether an interference signal is received {0009; 0011}, wherein continued detection of the signal strength at or above said minimum strength exclusively maintains said weapon in said active state and prevents return of said weapon to said inactive state {0007; 0008; 0009; 0030; 0031}; and

deactivating the weapon by the processor by returning the weapon to said inactive state to prevent firing of the weapon once the signal strength of the uncoded signal received by the receiver falls to a level less than the minimum strength during said monitoring {0014; 0019; 0031}.

21. (Cancelled)

22. (Rejected) The method of controlling the use of a weapon of Claim 20, wherein the uncoded signal comprises an uncoded continuous RF signal and the activation signal comprises an RF signal **{0018}**.

24. (Rejected) The method of controlling the use of a weapon of Claim 20, wherein the identification unit **{2; Figure 1}** is integrated into a wristband **{4; Figures 2 and 3}** , and the identification unit includes a switch **{14; Figure 3}** for indicating if the wristband is closed **{0012; 0015; 0027}**, the identification unit detecting an authorized user and transmitting the activation signal **{0016}** followed by the uncoded signal to place and maintain the weapon in the active state only when the wristband is closed **{0015}**.

27-28. (Cancelled)

29. (Rejected) A method of controlling the use of a weapon **{1; Figure 1}** having a module **{20; Figure 1}** **{0029}** with a receiver **{25; Figure 1}** **{0029}** and a

processor {18; **Figure 1**} {0029} attached thereto, the method comprising:

providing a weapon {1; **Figure 1**} having a module {20; **Figure 1**} {0029} with a receiver {25; **Figure 1**} {0029} and a processor {18; **Figure 1**} {0029} attached thereto;

transmitting from an identification unit {2; **Figures 1-3**} that is separate from the weapon {0026; 0028} and carried by a user authorized to use said weapon, a transmitted signal that comprises a coded activation signal {16; **Figure 1**} {0028; 0029; 0016} and a continuous signal {19; **Figure 1**} {0007; 0008; 0031} after the coded activation;

receiving at the receiver {25} a received signal which comprises the transmitted signal {16, 19; **Figure 1**} from the identification unit {0018; 0029; 0030; 0031};

monitoring the received signal received by the receiver in the module {0030; 0031} and, with the processor {18; **Figure 1**} of the module {20; **Figure 1**}, placing the weapon in an activated state to

permit firing of the weapon if the received signal includes the coded activation signal {0016; 0029};

after placing the weapon in the activated state, monitoring a signal strength of the received signal in the module {0030; 0031};

by said monitoring, maintaining the weapon in the activated state exclusively dependent {0007; 0008} upon the signal strength of the received signal monitored in the module being at or above a minimum signal strength {0007; 0008; 0031}, and regardless of a frequency of the received signal {0008; 0007} or the presence or absence of the coded activation signal in the received signal {0008};

wherein said maintaining step avoids a deactivation of the weapon from the activated state by a potential interfering signal {0009; 0011} from an interfering transmitter {0009; 0011} provided that the signal strength of the received signal is at or above the minimum signal strength during said maintaining step {0008; 0009}; and

deactivating the weapon with the processor if the signal strength of the received signal falls below

the minimum signal strength during said monitoring
{0031; 0014; 0019; 0030; 0032}.

30. (Rejected) The method of controlling the use of a weapon of Claim 29, wherein avoiding deactivation of the weapon from the activated state occurs when said signal strength is at or above the minimum signal strength such that the signal strength of the received signal may include a field strength of the potential interfering signal from the interfering transmitter without disturbing a readiness of the weapon to fire in the activated state **{0009; 0011}.**

C. MEANS PLUS FUNCTION ANALYSIS

The current claims do not include means plus function limitations.

D. EVIDENCE SECTION

Exhibit 1: New Webster's Dictionary (4 Pages)

E. RELATED CASES SECTION

No related proceedings.

NEW *Exhibit 1*
**WEBSTER'S
DICTIONARY
AND THESAURUS**

of the English Language

LEXICON PUBLICATIONS, INC.

DANBURY, CT

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penditure || the amount by which something is greater than what is usual or permitted etc., a 10% excess of rejects || (pl.) acts which are more violent than accepted standards of conduct allow, the troops committed many excesses || (pl.) inordinate indulgence in sensual pleasure || (chem.) an amount of one substance greater than is necessary to complete reaction with another in excess of over, luggage in excess of 40 lbs. is taxed to excess beyond normal limits, immoderately 2. (éksees, iksés) *adj.* of something greater than what is usual or permitted, excess weight [fr. F. *excès*]

ex-cés-sive (iksésiv) *adj.* going beyond the limit of what is needed, tolerable, desirable etc., to drive at excessive speed || very great, excessive kindness [F. *excessif*]

ex-cés-s-profits tax (éksesprófit) a tax levied, esp. in wartime, on business profits in excess of the average of a specified period

ex-change (ikstféind3) *pres. part.* **ex-changing** *past and past part.* **ex-changed** *v.t.* to give or receive (one thing in return for something else) || to interchange, take or receive from another (the same thing as that which one gives, or its equivalent), to exchange greetings, exchange addresses || to change over from (one thing to another), to substitute (one for another), to exchange London fog for Riviera sunshine || to change (money) from one currency to another || to change places, holidays, jobs etc. with someone [O.F. *eschangier*]

exchange *n.* the giving or receiving of one thing in return for something else || a reciprocal giving and receiving of things of the same kind, an exchange of letters || an interchange of visits, jobs etc. || a changeover from one thing to another, a welcome exchange of poverty for comfort || a thing given in return for something else, would this phonograph be a fair exchange for your tape recorder? || the conversion of the money of one country into that of another || the price of one country's money in the currency of another || a central place of business for merchants, brokers or financiers, a wool exchange (*STOCK EXCHANGE) || (telephone) the local center to which subscribers are connected and through which they make and receive calls || (pl., banking) checks etc. sent to a clearinghouse **ex-change-ability** *n.* the state of being exchangeable **ex-change-able** *adj.* capable of being exchanged [M.E. *eschaunge* fr. A.F.]

exchange control control by a country of the exchange of its money against foreign money, with the ability to devalue or revalue when necessary, in the interests of stable international trade. It can limit the amounts made available for buying imports, for foreign travel or emigration, for foreign investments etc. and can claim foreign money earned, giving domestic currency in return, as a safeguard against speculative money moving between countries for quick profits. (*FOREIGN EXCHANGE)

exchange rate the price of a currency when traded for the currency of another nation

Exchange Rate Mechanism (ERM) part of the European Monetary System which seeks to promote monetary stability in Europe. It is administered by the finance ministers and central banks of the member states

exchange theory a theory of social behavior that holds that the actions of individuals, particularly in formal organizations, are motivated by the expectation of having their favors returned, although the obligation so created is diffuse, rather than specific

exchange, theory of (phys.) the theory formulated by Pierre Prévost that all material bodies are continually absorbing, emitting and reflecting radiant energy, the energy flux depending on the temperature

ex-chequer (ikstféker) *n.* a state treasury || the finances of a person or group **Ex-chequer** the British government department which receives and takes care of public revenue || the office of the chancellor who has this charge || *COURT OF EXCHEQUER [M.E. *escheker* fr. O.F. *eschiquier*, a chessboard, from the checked cloth which in Norman times covered the table at which payments were made, and which was an abacus]

ex-cimer (éksimer) *n.* (chem.) a molecular species formed by two identical molecules excited by an energy source

excimer laser (optics) a laser utilizing a noble gas, e.g., helium, neon, operating during an excimer transition

ex-ci-plex (éksipleks) *n.* the excited state complex that takes place when molecules of a dye

are electrically stimulated, immediately before emission of light, and leading to the creation of another form of the dye

ex-cise 1. (éksaiz) *n.* a tax duty levied on the manufacture, sale or consumption within a country of certain commodities, or the charge for a license to manufacture or sell them (cf. CUSTOMS) 2. (iksáiz) *v.t. pres. part.* **ex-cising** *past and past part.* **ex-cised** to lay excise duty on [prob. fr. M. Du. *excijis*]

ex-cise (iksáiz) *pres. part.* **ex-cising** *past and past part.* **ex-cised** *v.t.* to cut away by surgery || to remove, strike out, the footnotes have been excised from the popular edition **ex-ci-sion** (iksizjən) *n.* a cutting out || the thing cut out [fr. L. *excidere* (*excisus*)]

ex-cite (iksáit) *pres. part.* **ex-citing** *past and past part.* **ex-cited** *v.t.* to cause the emotions of (a person) to be intense || to arouse (admiration, jealousy etc.) || to stir up (the imagination etc.) || to incite (a mob) to collective action or hysteria || (biol.) to stimulate, cause to respond || (elec.) to cause to be electrically active or magnetic **ex-cit-a-bility** *n.* **ex-cit-a-ble** *adj.* able to be excited || emotionally unbalanced, quickly enraged or worked up **ex-cit-ant** (iksáitənt, éksáitənt) *n.* something which excites || (med.) a stimulant **ex-ci-ta-tion** (éksáitəsjən) *n.* **ex-ci-ta-tory** (iksáitətri, éksáitətri) *adj.* (med.) stimulating **ex-cite-ment** *n.* an exciting or being excited || a thing or event that causes excitement **ex-cit-ing** *adj.* [F. *exciter*]

ex-ci-ton (éksətpən) *n.* (*electr.*) a specially excited state of electrons in an insulator or semiconductor that permits transmission of energy without an electric charge, sometimes described as an electron and a hole in a bound state

ex-ci-ton-ics (éksətpəniks) *n.* (*electr.*) study of solid state physics dealing with excitons in di-electrics and semiconductors **excitonic** *adj.*

ex-claim (iksklém) *v.i.* to cry out in emotion or excitement || *v.t.* to utter under the stress of sudden thought or emotion [fr. F. *exclamer*]

ex-cla-ma-tion (ékskləméjən) *n.* the act of exclaiming || the words exclaimed || an interjection [F.]

exclamation point, exclamation mark the punctuation mark (!) which follows an exclamation

ex-clam-a-tory (ikskləmətri, ékskləmətri) *adj.* of or relating to exclamation || fond of using exclamations

ex-clave (ékskləiv) *n.* a part of a country geographically separated from the main part and surrounded by foreign territory (of which it is an enclave) [fr. EX + L. *clavis*, key]

ex-clude (iksklúd) *pres. part.* **ex-cluding** *past and past part.* **ex-cluded** *v.t.* to keep out, prevent or forbid the entry of || to leave out, to exclude from blame || to make impossible, prevent, to exclude the possibility of error || to leave out of account, they exclude the possibility of murder **ex-clud-ing** *prep.* except, excepting [fr. L. *excludere*]

ex-clu-sion (iksklúzjən) *n.* an excluding or being excluded to the exclusion of in such a way as to exclude, he plays chess to the exclusion of other interests with the exclusion of except for [fr. L. *exclusio* (*exclusionis*)]

ex-clu-sion-ary rule (iksklúzjənəri) (*law*) the barring of evidence unlawfully obtained

ex-clu-sive (iksklú:siv) 1. *adj.* sole, not shared with any others, exclusive rights || confined to a selected few (esp. the rich or snobbish), an exclusive neighborhood || fastidiously selective, exclusive in one's choice of friends || having the effect of excluding, mutually exclusive choices || (Br., of terms charged) limited to what is specified 2. *adv.* (of dates, numbers etc.) not counting the first and last mentioned, 8 to 16 exclusive exclusive of excluding, not allowing for, sales, exclusive of this month's, have reached a million [fr. M.L. *exclusivus* fr. *excludere*, to leave out]

ex-cog-i-tate (ékskód3iteit) *pres. part.* **ex-cog-i-tating** *past and past part.* **ex-cog-i-tated** *v.t.* to think out or puzzle out **ex-cog-i-ta-tion** *n.* [fr. L. *excogitare* (*excogitatus*)]

ex-com-mu-ni-cate 1. (ékskəmjú:nikeit) *v.t. pres. part.* **ex-com-mu-ni-cating** *past and past part.* **ex-com-mu-ni-cated** (*eccles.*) to exclude partially or totally from communion with the Church 2. (ékskəmjú:nikit) *adj.* excommunicated 3. (ékskəmjú:nikit) *n.* an excommunicated person **ex-com-mu-ni-cá-tion** *n.* an excommunicating or being excommunicated. Lesser excommunication excludes from the sacraments, greater excommunication from all the

benefits of the Church [fr. L. *excommunicare* (*excommunicatus*), to excommunicate]

ex-co-ri-ate (ékskóri:et, ékskóri:et) *pres. part.* **ex-co-ri-ating** *past and past part.* **ex-co-ri-ated** *v.t.* to remove the skin from by tearing, rubbing, grazing, scalding etc. || (*rhet.*) to criticize savagely **ex-co-ri-a-tion** *n.* [fr. L. *excoriare* (*excoriatus*), to flay]

ex-cre-ment (ékskrəmənt) *n.* waste matter expelled from the bowels **ex-cre-men-tal** (ékskrəməntl) *adj.* [F. *excrément*]

ex-cres-cence (ékskrésns) *n.* an abnormal growth (on a plant, an animal or the human body, e.g. a wart) || a normal external growth, e.g. an elephant's trunk [fr. L. *excrecentia* fr. ex-out + *crescere*, to grow]

ex-cres-cent (ékskrésnt) *adj.* forming or like an excrescence || (*gram.*) epenthetic [fr. L. *excre-sens* (*excrecentis*) fr. *excrecere*, to grow out]

ex-cre-ta (ékskrif:ta) *pl.* *n.* urine and feces, the nonnutritive material taken in with food and passed out of the alimentary canal || (*bot.*) deleterious substances formed within a plant [L.]

ex-crete (ékskrif:t) *pres. part.* **ex-creting** *past and past part.* **ex-creted** *v.t.* to eliminate (waste matter) from the plant or animal system **ex-cre-tive** *adj.* **ex-cre-tory** (ékskrətri, ékskrətri) 1. *adj.* of or for excretion 2. *n.* pl. **ex-cre-to-ries** an excretory organ [fr. L. *excre-tere* (*excretus*), to separate out]

ex-cre-tion (ékskrif:ʃən) *n.* the act of excreting the matter excreted [fr. L. *excretio* (*excretionis*)]

—Some end products of animal metabolism, often nitrogenous compounds, are useless or harmful to the organism. They are excreted from the body, indigestible matter being excreted as feces and urea and other compounds as urine, or they are made harmless within it. Excretion also takes place through the skin (ex-pelling water, salts, fat) and from the lungs (carbonic acid gas). Invertebrates have various means of getting rid of waste products, e.g. the contractile vacuole in the amoeba and other protozoa, nephridia in the earthworm, Malpighian tubules in insects etc. Plants produce few waste products: these are usually excreted in gaseous form or stored as harmless solids

ex-cru-ci-ating (ékskrú:fi:tiŋ) *adj.* excruciatingly painful or hard to bear [pres. part. of *excruciate*]

ex-cul-pate (ékskəlpeit, ékskəlpeit) *pres. part.* **ex-cul-pating** *past and past part.* **ex-cul-pated** *v.t.* to declare free from blame **ex-cul-pa-tion** *n.* **ex-cul-pa-tory** (ékskəlpetri, ékskəlpetri) *adj.* [fr. EX + L. *culpa*, fault]

ex-cu-r-rent (ékskərənt, ékskərənt) *adj.* (*zool.*) ducts, channels or canals in which there is an outgoing flow, as in sponges || (*bot.*) having the midrib of the leaf projecting beyond the apex || (*bot.*) having a single, straight, undivided main stem, as in some coniferous trees [fr. L. *excurrere* (*excurrentis*) fr. *excurrere*, to run out]

ex-cu-rsion (ékskərsjən, ékskərsjən) *n.* a short pleasure trip to and from a place, esp. one reduced rates on public transport || a wandering from the subject, a digression || the attempting of an activity other than one's usual one **ex-cursion into politics** || (*astron.*) a deviation from the normal path of a heavenly body **ex-cursion-ist** *n.* [fr. L. *excursio* (*excursionis*), running out]

ex-cu-rsive (ékskərsiv) *adj.* of or characterized by digression, an *excursive treatment* of a subject [fr. L. *excurrere* (*excursus*), to go forth]

ex-cu-rsus (ékskərsəs) *pl.* **ex-cu-rsus-es**, **ex-cu-rsus** *n.* a special note or appendix in learned work dealing with a particular point on a subject [L.]

ex-cus-a-ble (ékskjú:zəbl) *adj.* that can be excused or pardoned || justified **ex-cus-a-bly** *adv.* **ex-cus-a-tory** (ékskjú:zətri, ékskjú:zətri) *adj.* serving or intended to excuse, apologize

ex-cuse (ékskjú:z) *pres. part.* **ex-cusing** *past and past part.* **ex-cused** *v.t.* to free (oneself or someone else guilty of a fault) from blame || to reason for not blaming, nothing can excuse carelessness || to forgive, overlook, to excuse a fault || to release (someone) from an obligation, undertaking or duty, your ill-health will excuse you from night duties || to give exemption, he is excused night duty || to permit (someone) to leave a classroom etc. [M.E. *excusen*, excusare]

ex-cuse (ékskjú:s) *n.* the act of excusing || a thing which serves to excuse || a pretence, backache is only an excuse for not gardening (pl.) apologies [O.F. *excuse*]

denounce (dináuns) *pres. part. denouncing past and past part. denounced v.t.* to inform against || to censure, esp. publicly, inveigh against || to announce formally the end of (a treaty, agreement etc.) **denouncement** *n.* [O.F. *denoncier*]
denounce *n.* mediating term in the U.S. Senate between "censure," which is the strongest condemnation of a member, and "condemnation," a less harsh term used for censuring members for improper conduct
dense (dens) *comp. denser superl. densest adj.* massed closely together || thick, *dense fog* || (of the expression of thought, images) rich in texture, requiring mental effort to appreciate || stupid, slow-witted || (phys.) of a medium which has a relatively large retarding effect on radiation and hence a high refractive power || (photo.) tending to be opaque [fr. L. *densus*]
densimeter (densimítar) *n.* any instrument for measuring density or specific gravity
densitometer (densitómítar) *n.* a densimeter || an instrument for measuring optical density, esp. that of a photographic image
density (densiti:) *pl. den-sities* *n.* the quality of being dense || (phys.) mass per unit volume || (of a static charge) the quantity of electricity per unit area or unit volume || (optics) the degree of opacity of a translucent substance, or of darkening of a photographic image || the amount of anything per unit of volume or area, *population density* || (pop.) stupidity [F. *densité*]
dent (dent) *n.* a slight hollow made in a surface by pressure or a blow 2. *v.t.* to make a dent in || *v.i.* to become dented [var. of DINT]
dent *n.* a toothlike notch, e.g. in a lock or gear-wheel [F.]
dental (dént'l) 1. *adj.* of or relating to the teeth or dentistry || (phon.) formed with the tip of the tongue against the teeth or the alveolar ridge, e.g. 't' and 'd' 2. *n.* a dental consonant [fr. Mod. L. *dentalis* fr. *dens* (dentis), tooth]
dental floss waxed thread used for cleaning between the teeth
dentalize (dént'laiz) *pres. part. dentalizing past and past part. dentalized v.t. (phon.)* to make (a speech sound) dental
dentate (dén'teit) *adj. (biol.)* toothed || having a sharp, sawlike edge **den-ta-tion** (dén'téifan) *n.* [fr. L. *dentatus* fr. *dens* (dentis), tooth]
Dentcare Canadian government program of free dental care for children
denticle (dén'tik'l) *n.* a small tooth or tooth-shaped projection || the scales of certain elasmobranch fish **den-tic-u-lar** (dén'tikjular), **den-tic-u-late**, **den-tic-u-lated** *adjs.* **den-tic-u-lá-tion** *n.* [fr. L. *denticulus*, little tooth]
den-ti-frice (dén'tifris) *n.* a paste or powder for cleaning the teeth [F.]
dentil (dént'l) *n.* one of a row of small rectangular blocks used as an ornamental design, esp. under a cornice in classical architecture [obs. F. *dentille*]
den-tin (dén'tin) *n.* dentine
den-tine (dén'tin) *n.* a hard, elastic substance, chemically resembling bone, composing the main part of teeth [fr. L. *dens* (dentis), tooth]
dentist (dén'tist) *n.* someone professionally qualified to treat ailments of the teeth **den-tis-try** (dén'tistri:) *n.* the science of the care of the teeth || the work of a dentist [fr. F. *dentiste*]
den-ti-tion (dén'tifan) *n.* the development of teeth, teething || the number and kind of teeth and the way they are arranged in an animal [fr. L. *dentitio* (dentitionis)]
den-ture (dén'tar) *n.* a set of artificial teeth [F.]
den-tur-ist (dén'toríst) *n.* dental technician who provides dentures for patients without benefit of a dentist's professional services
de-nu-clear-ize (di:nú:kli:əraiz) *v.* to make free of nuclear arms — **denuclearization** *n.*
de-nu-cle-ate (di:nú:kli:eit) *v.* to remove the nucleus, esp. of cells
den-u-da-tion (dij:nudéifan, dij:njudéifan, denjudeifan) *n.* the process of erosion and transportation continually affecting the surface of the earth. The principal agents are water (rivers, rain), frost, glaciers, wind, change in temperature [F. *dénudation*]
de-nude (dinú:d, dinjú:d) *pres. part. de-nuding past and past part. de-nuded v.t.* to strip, make bare || to lay bare (rock etc.) by erosion of the strata above [fr. L. *denudare*]

de-nun-cia-tion (dinánsi:éifan) *n.* the act of denouncing || an instance of censuring, esp. publicly [fr. L. *denunciatio* (denunciatio)]
de-nun-ci-a-tor (dinánsi:éitar) *n.* someone who denounces **de-nun-ci-a-tory** (dinánsi:éitri:, dinánsi:éituri:) *adj.* [F. *dénoncateur* fr. L.]
Den-ver (dénvər) the capital (pop. 467,610, with agglom. 1,768,000) of Colorado, center of an agricultural and mining region (gold, silver, coal). Industries: canning, meat packing, mining machinery. City has regional federal offices, branch of U.S. mint, and military installations
de-ny (dinái) *pres. part. deny-ing past and past part. denied v.t.* to declare to be untrue, to deny a charge || to repudiate, *Peter denied Christ* || to refuse (someone something or something to someone) to deny oneself to practice self-denial [F. *dénier*]
de-o-dand (di:ədənd) *n.* (Eng. hist.) something confiscated by the crown, because it had been the immediate cause of a man's death. The proceeds were used for alms [A.F. *deodande*]
de-o-dar (di:ədər) *n.* *Cedrus deodara*, fam. *Coniferae*, a very large Himalayan cedar yielding valuable wood and noted for its beauty [Hindi *dēodār* fr. Skr. *deva-dāra*, divine tree]
de-o-dor-ant (di:ədərənt) *n.* an agent for neutralizing unpleasant odors, esp. of perspiration [fr. DE + L. *odorans* (odorantis) fr. *odorare*, to smell]
de-o-dori-za-tion (di:pudərizéifan) *n.* a deodorizing
de-o-dor-ize (di:ədərəiz) *pres. part. de-o-dor-izing past and past part. de-o-dorized v.t.* to neutralize a bad odor in (a room, clothes etc.) [fr. DE + L. *odor*, smell]
de-on-to-log-i-cal (di:ɒntələdʒik'l) *adj.* of or relating to deontology
de-on-to-log-ist (di:ɒntələdʒist) *n.* a philosopher concerned with deontology
de-on-to-log-y (di:ɒntələdʒi:) *n.* the science of duty or moral obligation [fr. Gk. *deon* (deontos), obligation + *logos*, discourse]
de-or-bit (di:ərɒbit) *v.* to remove from or depart from orbiting — **deorbit *n.* the process
de-ox-i-dize (di:ɒksidaiz) *pres. part. de-ox-i-dizing past and past part. de-ox-i-dized v.t.* to remove oxygen from || to reduce from the state of an oxide
de-oxy-cy-ti-dine (di:ɒksi:sáitədin) (abbr. DDC) a drug approved by the U.S. Food and Drug Administration for the treatment of adult patients suffering from AIDS
de-oxy-gen-ate (di:ɒksidʒəneit) *pres. part. de-oxy-gen-ating past and past part. de-oxy-gen-at-ed v.t.* to remove oxygen, esp. free oxygen, from
de-oxy-ri-bo-nu-cle-ic acid (di:ɒksiraibounu:kli:tik, di:ɒksiraibounu:kli:tik) (abbr. DNA) the nucleic acid found in the nuclei of all cells. It is considered as a gene. The chemical structure of DNA is characterized by sequences of four nitrogenous bases (adenine, thymine, guanine and cytosine) occurring in one of two nucleic acid chains and in a complementary fashion in the other. The sequence of bases in a gene constitutes a code that determines the nature of the quality conferred on the organism inheriting that gene. It is believed that the sequence of bases determines the sequence of amino-acid residues in a protein synthesized in the cell under the influence of the gene. The process is thought to occur in two steps: the gene serves as a template for the production of some thousands of molecules of ribonucleic acid. This ribonucleic acid then, with the genic master code transmitted to it, combines the molecules of the various amino acids (there are twenty in all) in the proper sequence, each ribonucleic acid molecule producing some ten thousand protein molecules. In addition to controlling the manufacture of other molecules, DNA can serve as a template for its own reduplication during mitosis
de-oxy-ri-bo-nu-cle-o-tide (di:ɒksiraibounu:kli:təid) *n.* a nucleotide constituent of DNA containing deoxyribose, a structural sugar derivative
de-part (dipárt) *v.i.* to go away || to set off or out || to deviate, to depart from routine [O.F. *de-partir*]
de-parted (dipártid) 1. *adj.* bygone 2. *n.* the departed the dead person or persons
de-part-ment (dipártment) *n.* a distinct branch of a whole, e.g. of a complex business organization, a big store, or municipal, state, college or university administration || an administrative district in France of the largest category de-**

part-men-tal (di:partmént'l, di:partmént'l) *adj.*
de-part-mén-tal-ize *pres. part. de-part-men-tal-izing past and past part. de-part-men-tal-ized v.t.* [M.E. fr. O.F.]
department store a large store with many departments, organized for selling many different kinds of goods
de-part-ure (di:partfər) *n.* a going away || a deviation || a fresh course of action || (naut.) the amount by which a ship has changed its longitude in sailing to take one's departure to say goodbye and go [O.F. *departüre*]
de-pend (dipénd) *v.i.* (with 'on' or 'upon' in all senses) to rely for livelihood, support etc., *he depends on his pen for a living* || to rely trustfully, count, *don't depend on his cooperation* || to be contingent, *the plan depends on the weather* [O.F. *dependre*]
de-pend-a-bil-i-ty (dipéndəbiliti:) *n.* the quality of being dependable
de-pend-a-ble (dipéndəb'l) *adj.* reliable, trustworthy **de-pend-a-bly** *adv.*
dependance *DEPENDENCE
de-pend-ant, de-pend-ent (dipéndənt) *n.* someone who relies upon another for financial support [F. *dépédant*]
de-pend-ence, de-pend-ance (dipéndəns) *n.* a depending on another for material or emotional support || trust, reliance || the state of being contingent [F. *dépendance*]
de-pend-en-cy (dipéndənsi:) *pl. de-pend-en-cies* *n.* the state of being dependent || something depending on or subordinate to another, esp. a country controlled by another
de-pend-ent (dipéndənt) 1. *adj.* (of a person) being a financial charge || (of lands or peoples) subject || (gram., of a clause) subordinate || forced to rely, *dependent on a friend for a lift to town* || (bot.) hanging down, *dependent branches* || contingent 2. *n.* *DEPENDANT [F. *dépédant*, spelling altered after L. *dependens* (dependents)]
dependent clause a subordinate clause
de-phos-pho-rize (di:fəsfəraiz) *pres. part. de-phos-pho-rizing past and past part. de-phos-pho-rized v.t.* to remove the phosphorus from (ore etc.)
de-pict (dipikt) *v.t.* to represent by drawing or painting || to describe verbally **de-pic-tion** *n.* [fr. L. *depingere* (depictus), to paint]
de-pi-late (dépəleit) *pres. part. de-pi-lating past and past part. de-pi-lated v.t.* to remove hair from **de-pil-a-to-ry** (dipilətri:, dipilətri:) 1. *adj.* able to remove unwanted hair 2. *pl. de-pil-a-to-ries* *n.* a chemical preparation for removing unwanted hair [fr. L. *depilare* (depilatus)]
de-plen-ish (diplénif) *v.t.* to reduce considerably the contents of [DE + REPLENISH]
de-plete (diplít) *pres. part. de-pletting past and past part. de-pleted v.t.* to reduce or empty by destroying or using up, *depleted capital de-pletion* *n.* [fr. L. *deplere* (depletus), to empty out]
de-plor-a-ble (diplərab'l, diplərab'l) *adj.* much to be regretted || wretched, *deplorable living conditions* **de-plor-a-bly** *adv.*
de-plore (diplər, diplour) *pres. part. de-ploring past and past part. de-plored v.t.* to regret very much or express conventional regret for, *to deplore someone's absence* || to be grieved and appalled by, *to deplore the torturing of prisoners* [fr. L. *deplorare*, to bewail]
de-plot (dipləi) *v.t.* to spread out (troops) || to cause (ships, tanks etc.) to move into battle formation || *v.i.* (of troops) to spread out || (of a fighting force) to take up battle formation **de-plō-y-ment** *n.* [F. *déploier*]
de-plume (di:plúm) *pres. part. de-pluming past and past part. de-plumed v.t.* to pluck the feathers from || (rhet.) to strip honors, possessions etc. from [fr. F. *déplumer*]
de-po-lar-ize (di:pəuləraiz) *pres. part. de-po-lar-izing past and past part. de-po-larized v.t.* to deprive of polarity || to prevent polarization of (e.g. an electrode)
de-po-lit-i-ciz-a-tion (di:pəlitisizéifan) *n.* removal from partisan politics — **depoliticize** *v.* — **depoliticized** *adj.* Cf. **POLITICIZATION**
de-poll-ute (di:pəlut) *v.* to remove pollution — **de-pollution** *n.*
de-po-nent (dipənənt) 1. *adj.* (gram., of verbs in certain languages) passive or middle voice in form but active in meaning 2. *n.* a deponent verb || someone who gives evidence, esp. in writing, for use in court [fr. L. *deponens* (deponentis) fr. *deponere*, to put down, testify]
de-pop-u-late (di:pəpjuleit) *pres. part. de-pop-u-lating past and past part. de-pop-u-lated v.t.*

CONCISE PRONUNCIATION KEY: (a) æ, cat; ɑ, car; ɔ, fawn; ei, snake. (e) e, hen; i, sheep; iə, deer; ɛə, bear. (i) i, fish; ai, tiger; ɔ, bird. (o) o, ox; au, cow; ou, goat; u, poor; ɔi, royal. (u) ʌ, duck; u, bull; u:, goose; ə, bacillus; ju:, cube. x, loch; θ, think; ð, bother; z, Zen; ʒ, corsage; dʒ, savage; ŋ, orangutang; j, yak; f, fish; tʃ, fetch; ɹ, rabble; ɹn, redder. Complete pronunciation key appears inside front cover.